



# THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS

## Fiberglass Reinforced Epoxy Rods

<b>Item:</b>	<b>Fiberglass Reinforced Epoxy Threaded &amp; Unthreaded Rods</b>
<b>Availability:</b>	Threaded Rods - Nominal Diameters: M10, M12, M16, M20 Maximum Length: 1200 mm (48") Threaded* / Up to 2400 mm (96") if not threaded.
<b>Fabricated Parts:</b>	The Gund Company custom fabricates materials to the exact specifications and drawings of our customers. Standard Size is M10 - M20 (3/8" - 3/4") Larger size and non standard thread, pitch available upon request. The rods meet ANSI/NEMA IM 60000 and IEC 61212-3-3 EPCG 42 requirements.

\*For the maximum threaded rod length (48"), the 0.8" section in the middle is unthreaded.

Threaded Rod			Test Method	Units	M10 - 1.5	M12 - 1.75	M16 - 2	M20 - 2.5
Breaking Load	Nut Height	1 X Diameter		kN (lbf)	13 (2923)	18 (4047)	36 (8094)	54 (12140)
	Nut Height	2 X Diameter			20 (4497)	31 (6969)	55 (12365)	82 (18435)

Grounded Rod Material (G12) <sup>(1)</sup>		ASTM Test	Units	G11 Nominal
Standard Color		--	--	Natural
Type of Resin		--	--	Epoxy
Specific Gravity		--	g/cc (lbs./in3)	1.9 (0.069)
Flexural Strength (0.062")	LW Condition A	ASTM D-790	Mpa (ksi)	552 (80)
	CW Condition A			486 (70)
	LW Condition E-1/150:T-150			276 (40)
Flexural Modulus (0.062")	LW	ASTM D-790	Gpa (ksi)	29 (4200)
	CW			27.6 (4000)
Compressive Strength - (0.500")		ASTM D-695	Mpa (ksi)	483 (70)
Tensile Strength (0.125") - LW		ASTM D-638	Mpa (ksi)	283 (41)
Perpendicular Electric Strength - (90°C in Oil, 1.5mm)		IEC 60243-1	kV/mm	15
Parallel Breakdown Voltage - (Stepped 90°C in Oil, 3mm)		IEC 60243-1	kV	>45
Dielectric Strength (0.062") - Condition A, Oil		ASTM D-149	V/mil	485
Water Absorption (0.188")		ASTM D-229	%	0.15
Coefficient of Thermal Expansion		--	"/"°C x 10-6	10.0
Thermal Endurance		IEC 60216	°C	180
Insulation Resistance - (After Water Immersion)		IEC 60167	MΩ	>10 <sup>7</sup>
Flammability (0.250")		UL94	Class	VO <sup>(2)</sup>

LW = Length-Wise ; CW =Cross-Wise

<sup>(1)</sup> Values are based on unthreaded rod/base material

<sup>(2)</sup> G-12 from The Gund Company is VO at 0.25" and greater thickness. Below this thickness is HB

Data supplied above are typical values and are not to be considered specification values. All of the information, suggestions and recommendations pertaining to the properties and uses of the products herein are based upon tests and data believed to be accurate; however, the final determination regarding suitability of any material described herein for the contemplated application, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty, expressed or implied, including, without limitation warranty of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.